



Dart Aerospace Ltd.
1270 Aberdeen St
Hawkesbury, ON
K6A 1K7
Canada

Tel (613) 632-5200
Fax 613 632-5246

D2580-1**Job Sheet 207175****Part No:** D2580-1**Job Qty:** 8 pcs**Part Name:** 205 Bent Tube**Part Weight:** 0 lbs**Status:** New**Priority:** Medium**Job Created:** 2/19/20**Job Tracking No:****Due Date:** 3/16/20**Created By:** Marie Lajeunesse**Type:** Stock**Description:**

Note: DWG D2580 REV h SHEETS 1,2,3,8 IPP B 01.11.08 Revised Step 9, 10, 12, and 13 SM IPP Rev:C 10.12.01
as per DEO D1 DD verf:ec

Ship Via:**Bill of Materials****Job Routing**

Op No	Operation	Qty	Start Date	Due Date	Standard		Workcenter/Supplier		Sign-off
					Setup Hrs	Run Hrs	Workcenter / Supplier	Lead Time	
100	Skidtubes - 1	8 pcs	3/16/20		0.00	7.41	Skidtubes - 1		DD
							Skidtubes - 2		
							Skidtubes - 3		
							Skidtubes - 4		
							Skidtubes - 5		
							Skidtubes - 6		
							Skidtubes - 7		
101	QC 5	8 pcs	3/16/20		0.00	0.00	QC 5 - 10		BE
							QC 5 - 12		
							QC 5 - 17		
							QC 5 - 18		
							QC 5 - 19		
							QC 5 - 22		
							QC 5 - 24		
							QC 5 - 3		
							QC 5 - 43		
							QC 5 - 49		
							QC 5 - 51		
							QC 5 - 58		
							QC 5 - 68		
							QC 5 - 9		
							QC 5 - 50		
							QC 5 - 30		
							QC 5 - 40		
							QC 5 - 61		
							QC 5 - 81		
110	Handfinish - 1-1 Chemical-B4B	8 pcs	3/16/20		0.00	3.33	Handfinish - 1 - 1 - B4B		FEB 27 2020
							Handfinish - 1 - 2 - B4B		
							Handfinish - 1 - 3 - B4B		
							Handfinish - 1 - 4 - B4B		

**Container No:** S258760**Part:** D2580-1**Job No:** 207175**Serial No/Batch:** S258760**Revision:** H**Inspector:****Exp Date:****Instructions:** Various STC's

Dart Aerospace Ltd.
1270 Aberdeen Street
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CANADA
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Email: sales@dartaero.com
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Date: 02/26/20

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				Handfinish - 1 - 5 - B4B	
				Handfinish - 1 - 6 - B4B	
				Handfinish - 1 - 7 - B4B	
				Handfinish - 1 - 8 - B4B	
				Handfinish - 1 - 9 - B4B	
				Handfinish - 1 - 10 - B4B	
				Handfinish - 1 - 11 - B4B	
				Handfinish - 1 - 12 - B4B	
				Handfinish - 1 - 13 - B4B	
				Handfinish - 1 - 14 - B4B	
				Handfinish - 1 - 15 - B4B	
				Handfinish - 1 - 16 - B4B	
				Handfinish - 1 - 17 - B4B	
				Handfinish - 1 - 18 - B4B	
				Handfinish - 1 - 19 - B4B	
				Handfinish - 1 - 20 - B4B	
				Handfinish - 1 - 21 - B4B	
				Handfinish - 1 - 22 - B4B	
120	QC 7	8	3/16/20	0.00 0.00	QC 7 - 10
		pcs			QC 7 - 13
					QC 7 - 14
					QC 7 - 15
					QC 7 - 17
					QC 7 - 18
					QC 7 - 19
					QC 7 - 2
					QC 7 - 28
					QC 7 - 3
					QC 7 - 30
					QC 7 - 34
					QC 7 - 36
					QC 7 - 37
					QC 7 - 41
					QC 7 - 47
					QC 7 - 48
					QC 7 - 51
					QC 7 - 58
					QC 7 - 59
					QC 7 - 60
					QC 7 - 9
					QC 7 - 68
					QC 7 - 50
					QC 7 - 67
					QC 7 - 40
					QC 7 - 24
					QC 7 - 43
					QC 7 - 61
					QC 7 - 81

125	Skidtubes - 2 - B4B	8 pcs	3/16/20	0.00 7.41 231	QC 7 - 76	
					QC 7 - 79	DD
					QC 7 - 83	
					QC 7 - 82	
					Skidtubes - 1 - B4B	DD
					Skidtubes - 2 - B4B	
					Skidtubes - 3 - B4B	
					Skidtubes - 4 - B4B	
130	QC 5	8 pcs	3/16/20	0.00 0.00	Skidtubes - 5 - B4B	
					Skidtubes - 6 - B4B	
					Skidtubes - 7 - B4B	
					QC 5 - 10	
					QC 5 - 12	
					QC 5 - 17	
					QC 5 - 18	BE
					QC 5 - 19	
					QC 5 - 22	
					QC 5 - 24	
					QC 5 - 3	
					QC 5 - 43	
					QC 5 - 49	
					QC 5 - 51	
					QC 5 - 58	
					QC 5 - 68	
					QC 5 - 9	
					QC 5 - 50	
					QC 5 - 30	
					QC 5 - 40	
140	Packaging 3-1 - Stock - B4B	8 pcs	3/16/20	0.00 0.00	QC 5 - 61	
					QC 5 - 81	
					Packaging 3 - 1 - B4B	
					Packaging 3 - 2 - B4B	
					Packaging 3 - 3 - B4B	
					Packaging 3 - 4 - B4B	
					Packaging 3 - 5 - B4B	
					Packaging 3 - 6 - B4B	
					Packaging 3 - 7 - B4B	
					Packaging 3 - 8 - B4B	
					Packaging 3 - 9 - B4B	
					Packaging 3 - 10 - B4B	
					Packaging 3 - 11 - B4B	
					Packaging 3 - 12 - B4B	
					Packaging 3 - 13 - B4B	
					Packaging 3 - 14 - B4B	
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					Packaging 3 - 21 - B4B	
					Packaging 3 - 22 - B4B	
					Packaging 3 - 23 - B4B	
					Packaging 3 - 24 - B4B	
					Packaging 3 - 25 - B4B	
					Packaging 3 - 26 - B4B	
					Packaging 3 - 27 - B4B	
					Packaging 3 - 28 - B4B	
					Packaging 3 - 29 - B4B	

				Packaging 3 - 30 - B4B	
				Packaging 3 - 31 - B4B	
				Packaging 3 - 32 - B4B	
				Packaging 3 - 33 - B4B	
				Packaging 3 - 34 - B4B	
				Packaging 3 - 35 - B4B	
				Packaging 3 - 36 - B4B	
				Packaging 3 - 37 - B4B	
150 QC 21 - SA	8 pcs	3/16/20	0.00 0.00	QC 21 - SA - 21	DAS
				QC 21 - SA - 70	21
				QC 21 - SA - 53	9-8

Part Op 100 - (Skidtube) 1- Inspect mat'l D2500-1-190 for damage. 2-Drill pilot holes using drill jig DT 8149 A-BC-D 3-Open holes
 Descriptions: to 0.508" as per Dwg D2580 4-Debur holes per QSI002 section 4.2.3 and blow out all chips from inside of tube 5- Test fit
 inspection saddles on FWD & AFT saddle holes using DT9916.
 101 - (QC5- Inspect part completeness to step on W/O)
 110 - (Chemical Conversion Coat per QSI005 4.1)
 120 - (QC7-Inspect Chemical Conversion Coat)
 125 - (Skidtube) 1- Bond web in place per QSI 015. A/R Sikaflex-291 batch: 5241707 Sikaflex expire
 date: 05/28/2020 Start time and date: _____ bond for 12hrs
 130 - (QC5- Inspect part completeness to step on W/O)
 140 - (Identify as per dwg & Stock Location: _____) LOCATION : LG002
 150 - (QC21- Final Inspection - Work Order Release)

Job BOM				
Part / Item	Component Name	Quantity	Operation	Container
D2500-1-190	Ext'n -'I' Beam Tube 4"	8 pcs (1 ea)	100-Skidtubes - 1	<u>5206075</u>
D2596	Web, 205 Skidtube	8 pcs (1 ea)	125-Skidtubes - 2 - B4B	<u>5258985</u>

Job Allocations				
Operation	Component Part	Required	Inventory	Allocated
100-Skidtubes - 1	D2500-1-190	8	74	0
125-Skidtubes - 2 - B4B	D2596	8	0	0

Part Specifications	
Specifications could not be found.	

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ITEM	QTY -041	QTY -045	QTY -047	QTY -048	PART NUMBER	DESCRIPTION
1	X				D2580-041	SKIDTUBE ASSEMBLY
2		X			D2580-045	SKIDTUBE ASSEMBLY
3			X		D2580-047	SKIDTUBE ASSEMBLY
4				X	D2580-048	SKIDTUBE ASSEMBLY
20	1	1	1	1	D2500-1-190	EXTRUSION
21			16	16	D2570	BUSHING
22	1	1	1	1	D2576-3	STEP
23		4			D2579	SPACER
24	16	16	8	8	D2584-1	PLUG
25	16	16	8	8	D2584-3	O-RING
26	1	1	1	1	D2586	205 WEB
27	1	1	1	1	D2585	AFT CAP
28	1	1			D3584-5	WEARSHOE
29	1	1			D3584-9	WEARSHOE
30	1	1			D3584-11	WEARSHOE
31	1	1			D3584-13	WEARSHOE
32	20	20	24	24	D4202-1	SPACER
33			1		D4406-041	WEARPLATE ASSEMBLY
34			1		D4406-043	WEARPLATE ASSEMBLY
35				1	D5081-1	FWD WEARPLATE
36				1	D5081-3	AFT WEARPLATE
50	50	50			ALS7-1032-130 or AKS7-1032-130 or AKS4-1032-130 or AELS-1032-130	INSERT
51	50	50			ANSC4A	BOLT
52	2	2	2	2	AN3-5A	BOLT
53			8	8	ANA-45A	BOLT
54	50	50			NAS1148C0332R	WASHER (AN980C10L)
55	2	2	2	2	NAS1148D0332J	WASHER (AN980J10L)
56			8	8	MS21042-4	NUT (OR MS21042L4)

GENERAL NOTES:

- 1) MATERIAL: WA
- 2) FINISH: CHEMICAL CONVERSION PER DART QSI 005 4.1 PRIOR TO INSERTING D2586 WEB POWDER COAT (-041/-047/-049) GLOSS WHITE (REF 4.3.5.1) PER DART QSI 005 4.3 BLACK ANTI-SKID PAINT AS INDICATED (REF 4.3.5.8) PER DART QSI 005 4.4.
- 3) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED.
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED.
- 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX.
- 6) IDENTIFICATION: NONE
- 7) WEIGHT: D2580-041 = 33.7 lbs
D2580-045 = 33.7 lbs
D2580-047 = 45.1 lbs
D2580-048 = 32.0 lbs
- 8) WELDING PER DART QSI 004.
- 9) INSERT D2586 WEB TO LOCATION SHOWN OFF AFT END OF SKIDTUBE AND BOND WEB INTO OUTER TUBE WITH NON-STRUCTURAL SIKAFLEX-241 ADHESIVE PER DART QSI 018 BEFORE BENDING. ENSURE HOLES LINE-UP.
- 10) BEND AS A SMOOTH RADIUS STARTING WITH A MAXIMUM CENTERLINE RADIUS OF 60 AND ALLOWABLE IN THE BENT PORTION OF THE TUBE.
- 11) USE DART DRILL TEMPLATE DTR217 & DTR217 ONLY FOR D2580-041/-045 TO LOCATE AND DRILL 20-287 HOLES FOR WEARSHOE INSERTS. INSTALL ALS7-1032-130 PER SECTIONS B-B AND F-F (50 PLACES) AFTER FINISH. INSTALL ANSC4A BOLTS AND NAS1148C0332R WASHERS WITH SIKAFLEX-241-291.
- 12) INSERT D2584-1 PLUS CW D2584-3 O-RING IN HOLES MARKED "P" (BOTH SIDES OF TUBE) AFTER FINISH (16 PLACES FOR D2580-041/-045 AND 8 PLACES FOR D2580-047/-049)
- 13) IT IS ACCEPTABLE TO GRIND A RELIEF IN THE D2585 AFT CAP TO PREVENT INTERFERENCE WITH THE SPACER AT THIS LOCATION

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WORK ORDER

NO. 207175 M5

2002-09

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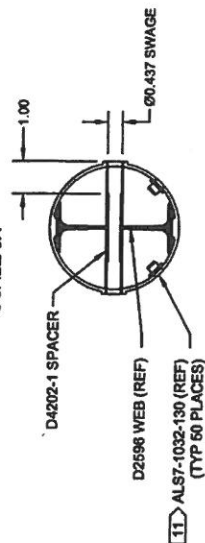
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REV.	DESCRIPTION	DS	DATE
H	SHEET: PL DELETE D2586-1/-041-13 GASKETS, WEIGHTS UPDATED ACCORDING X, SHEETS 2 & 4 PICTORIAL UPDATE FOR REMOVAL OF GASKETS	SAD	17.06.09
G	ADDED -048 -047 WEIGHT UPDATED PER DSI 8596	AJS	14.04.09
F	INCORPORATE DEO D2580-E-1 PER PART 12-218	DC	13.08.20
E	ADD D2580-047 (ZN C4-7) AND D2580-7 (ZN B3-9); INCLUDED DEO D2580-D-1; REFORMATTED DRAWING TO CURRENT STANDARDS; DTR217 & DTR217 WAS D2587-205 (ZN C4-1)	RF	11.06.21
D	CHANGE TO SS WEARPLATES AND GASKETS, INCLUDE DEO 8124/ 91B3	PH	07.04.06
C	REDRAWN, INCLUDED DEO 9094/ 9097	CP	08.08.26
B	AS MANUFACTURED	DS	08.12.02
A	NEW ISSUE	DS	08.08.16
DESIGN	DS	DATE	
DRAWN	SAD		
CHECKED	<i>[Signature]</i>		
INFO. APPR.	D2580		
APPROVED	<i>[Signature]</i>		
DE APPR.	<i>[Signature]</i>		
DATE	17.06.09		

DART AEROSPACE LTD
HAMPSHIRE, ONTARIO, CANADA
DRAWING NO. D2580
SHEET 1 OF 9
REV. H
TITLE 205 SKIDTUBE ASSEMBLY
SCALE NTS
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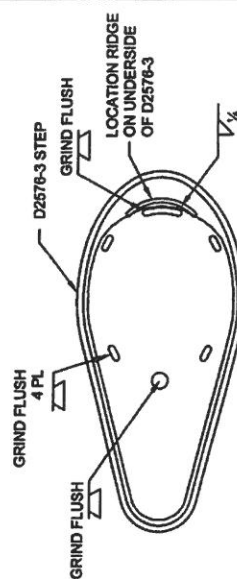
SECTION B-B
SCALE 5X



**AFTER DRILLING AND BENDING ASSEMBLY
PERFORM THE FOLLOWING FOR Ø0.608 HOLES ONLY:**

1. INSERT D4202-1 SPACER (20 PLACES)
2. SWAGE TO Ø0.437 X 1.00 DEEP PER QSI 002
3. TRIM / GRIND FLUSH PER QSI 002

DETAIL C
SCALE 5X



DESIGN	DS	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
DRAWN	SAD	DRAWING NO.	REV. H
CHECKED	<i>[Signature]</i>	D2580	SHEET 2 OF 9
MFG. APPR.	<i>[Signature]</i>	TITLE	SCALE
DE APPR.	<i>[Signature]</i>	205 SKIDTUBE ASSEMBLY	NTS
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DRAWN	SAD	DRAWING NO.	REV. H SHEET 3 OF 9
CHECKED	<i>MB</i>	MFG. APPR.	SCALE
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DE APPR.	<i>MB</i>	205 SKIDTUBE ASSEMBLY	CONFIRMING © 1998 BY DART AEROSPACE LTD
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**AFTER DRILLING AND BENDING ASSEMBLY
PERFORM THE FOLLOWING FOR Ø0.508 HOLES ONLY:**

- 1. CHAMFER HOLE 0.050 X 45°**
- 2. INSERT D2579 SPACER (4 PLACES)**
- 3. WELD INTO PLACE AND GRIND FLUSH**
- 4. DO NOT C'BORE**

Diagram illustrating the underside of a component, showing various features and grinding steps:

- GRIND FLUSH 4 FL
- GRIND FLUSH
- D2576-3 STEP
- LOCATION RIDGE ON UNDERSIDE OF D2576-3
- $\frac{1}{4}$

Diagram illustrating the rear view of the cap. The diagram shows a circular cap with a central rectangular area. A seal is located around the perimeter of the cap. A bolt is shown passing through the center of the cap, secured by a washer and a nut. A dimension line indicates a distance of 0.40 from the center of the bolt to the edge of the cap. A label '13' is shown in a box, pointing to the seal area.

Labels and dimensions:

- SEAL WITH SIKAFLEX-241-281
- 010.208
- DRILL PRIOR TO D2855 CAP INSTALLATION
- 2 PL
- ANS-5A BOLT (1)
- WASHER (1)
- 2 PL
- D2855 AFT CAP
- 0.40
- 13

**AFTER DRILLING AND BENDING ASSEMBLY
PERFORM THE FOLLOWING FOR Ø0.508 HOLES ONLY:**

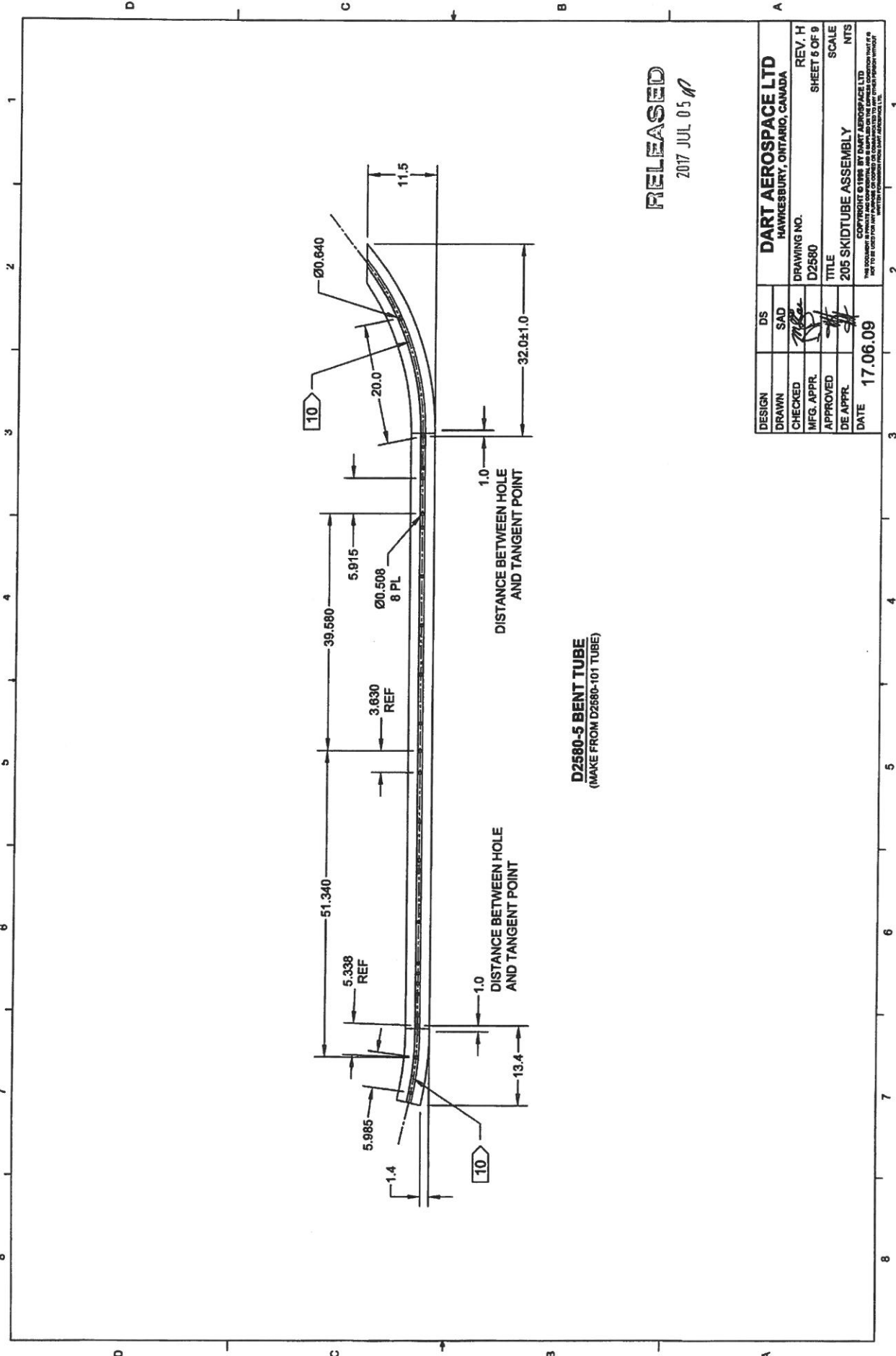
1. INSERT D4202-1 SPACER (20 PLACES)
2. SWAGE TO Ø0.437 X 1.00 DEEP PER QSI 002
3. TRIM/GRIND FLUSH PER QSI 002

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DESIGN	DS	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA DRAWING NO. DZ580 REV. H SHEET 4 OF 9 SCALE NTS 205 SKIDTUBE ASSEMBLY DESIGNED BY DART AEROSPACE LTD DRAWN BY <i>[Signature]</i> CHECKED BY <i>[Signature]</i> MFG. APPR. <i>[Signature]</i> APPROVED <i>[Signature]</i> DE APPR. <i>[Signature]</i>
DRAWN	SAD	
CHECKED	<i>[Signature]</i>	
APPROVED	<i>[Signature]</i>	
DATE	17.06.09	

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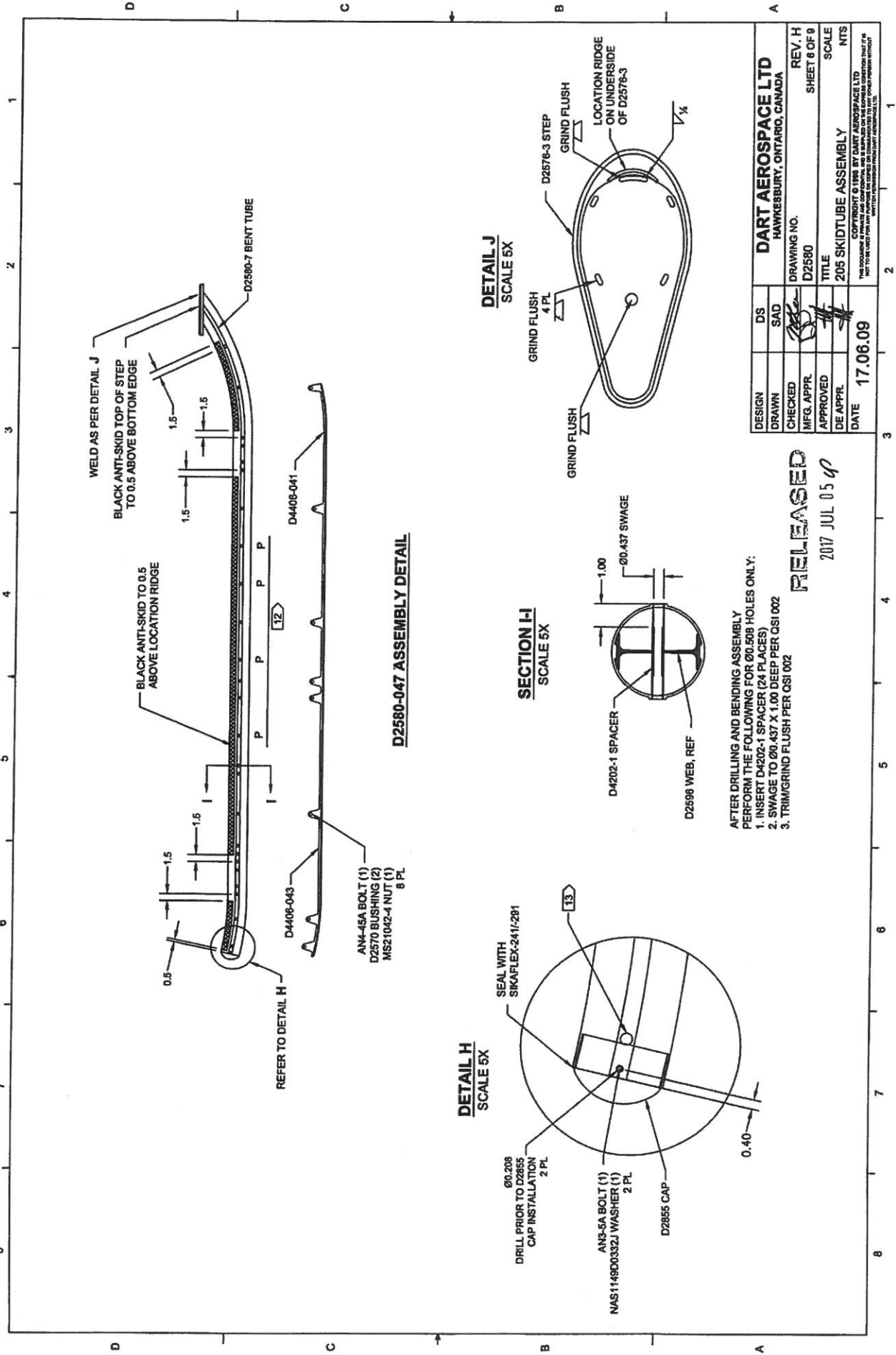
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D2580-5 BENT TUBE
(MAKE FROM D2580-101 TUBE)

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MFG. APPR.		SHEET 8 OF 9		
APPROVED	<i>MS</i>	TITLE	205 SKIDTUBE ASSEMBLY	SCALE
DE APPR.	<i>MS</i>	NTS		
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D2580-047 ASSEMBLY DETAIL

DETAIL H
SCALE 5X

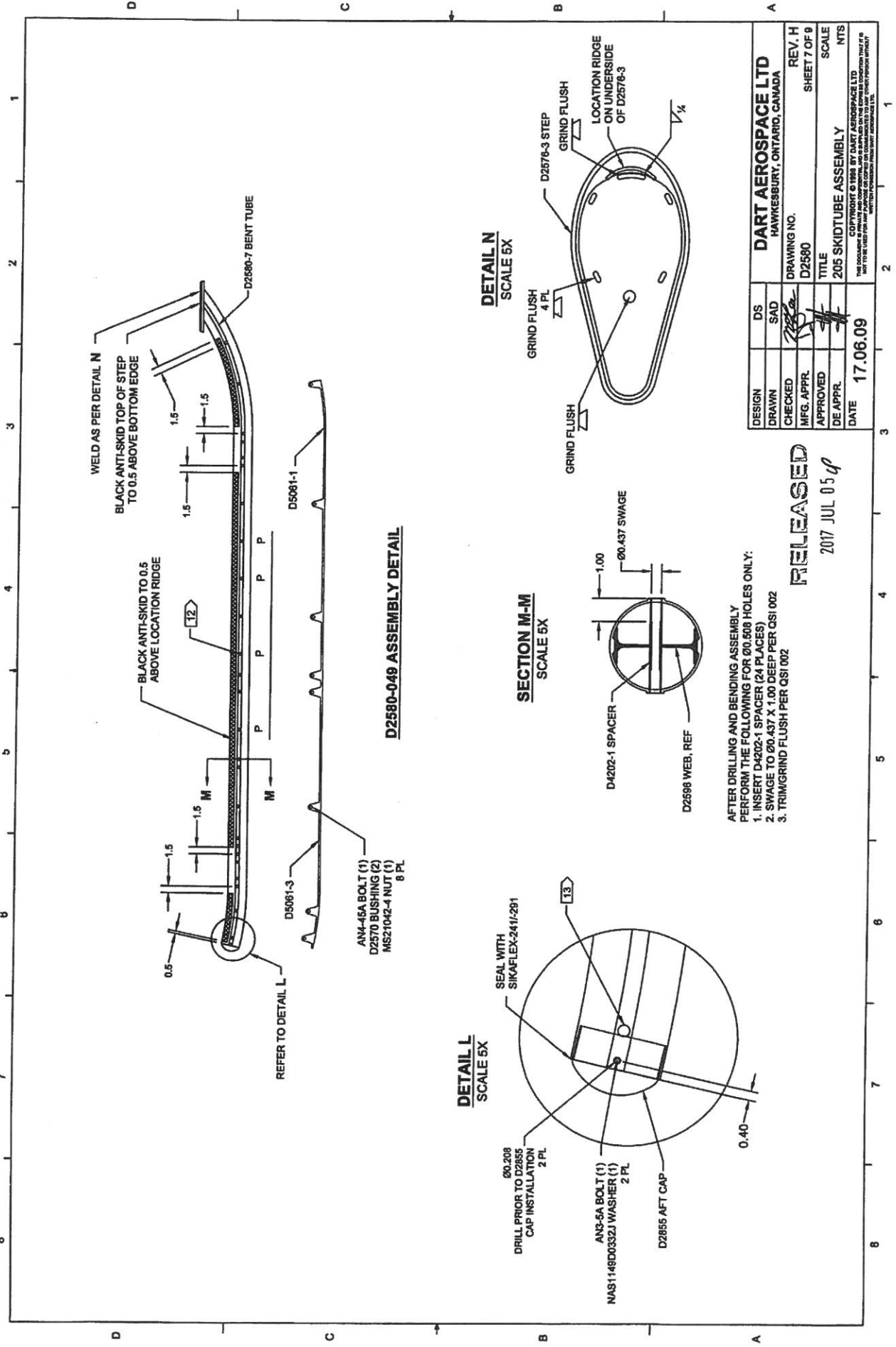
SECTION I-I
SCALE 5X

DETAIL J
SCALE 5X

AFTER DRILLING AND BENDING ASSEMBLY
PERFORM THE FOLLOWING FOR Ø0.508 HOLES ONLY:
1. INSERT D4202-1 SPACER (24 PLACES)
2. SWAGE TO Ø0.437 X 1.00 DEEP PER QSI 002
3. TRIM/GRIND FLUSH PER QSI 002

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COMPONENT						
DART AEROSPACE LTD						
HAWKESBURY, ONTARIO, CANADA						
DRAWING NO.						
D2580						
REV. H						
SHEET 6 OF 9						
TITLE						
205 SKIDTUBE ASSEMBLY						
SCALE						
NTS						

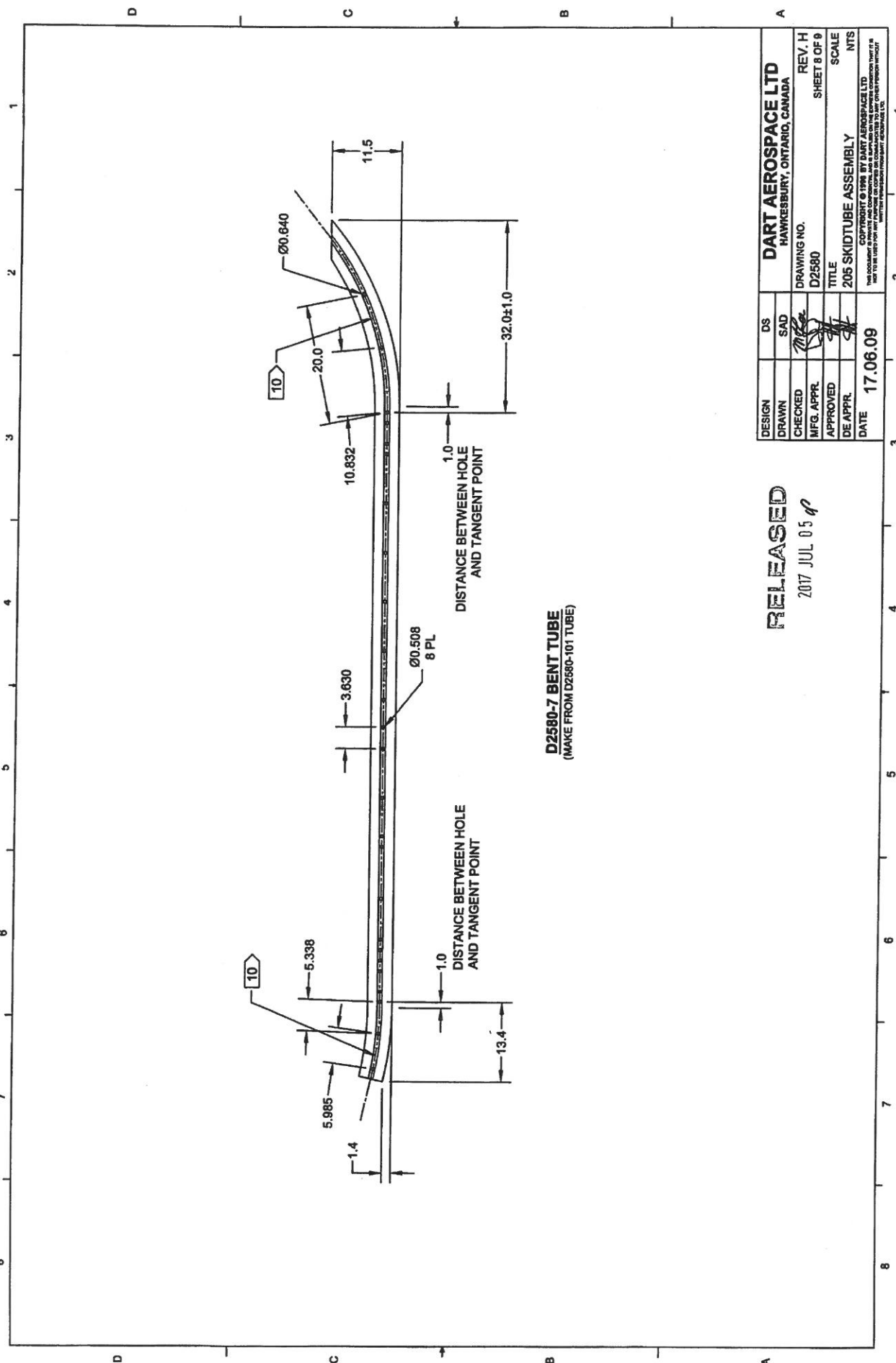


- AFTER DRILLING AND BENDING ASSEMBLY PERFORM THE FOLLOWING FOR Ø0.508 HOLES ONLY:
1. INSERT D4202-1 SPACER (24 PLACES)
 2. SWAGE TO Ø0.437 X 1.00 DEEP PER QSI 002
 3. TRIM/GRIND FLUSH PER QSI 002

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DRAWN	SAD	HAWKESBURY, ONTARIO, CANADA
CHECKED	288	DRAWING NO. D2580
MFG. APPR.		REV. H SHEET 7 OF 9
DE APPR.		TITLE 205 SKIDTUBE ASSEMBLY
DATE	17.06.09	SCALE NTS

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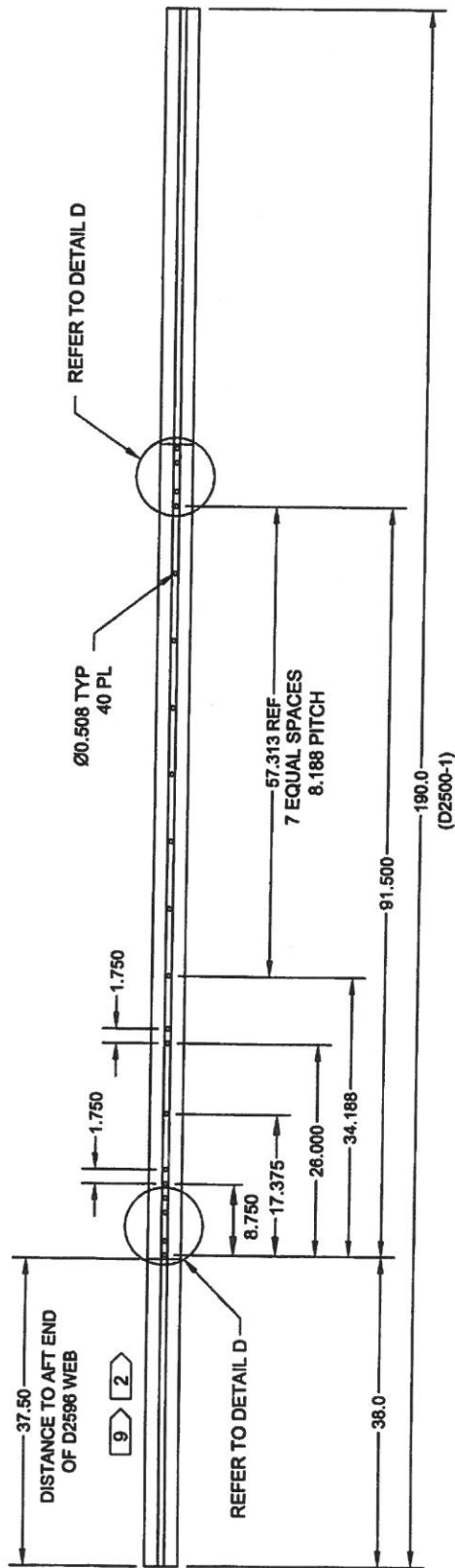


D2580-7 BENT TUBE
(MAKE FROM D2580-101 TUBE)

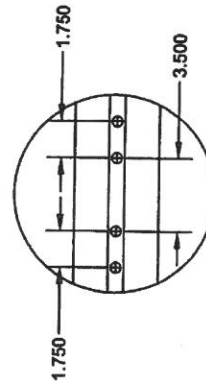
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DE APPR.	<i>[Signature]</i>	SCALE NTS
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D2580-101 TUBE



DETAIL D
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DE APPR.		SCALE NTS
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1 2 3 4 5 6 7 8

Entered: _____

Date: _____

WORK ORDER NON-CONFORMANCE / ROUTE UPDATE

NCR No. _____

Route update only ☐

Job: _____ Part No. _____	DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐	DEPARTMENT/PROCESS Cross tube ☐ Small Fab ☐ Finishing ☐ Skid-tube ☐ Machining ☐ Large Fab ☐ Eng. (Non-AW) ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Engineering ☐ Water Jet ☐ Supplier ☐ Quality ☐	Sequence #: _____ QTY Affected: _____	Date: _____ MRB (QSI042)	Description Work Order Deviation 	Disposition 	Completed By Lead hand / Supervisor QC / QA Coordinator																																			
Root Cause <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%; text-align: center;">Operator</td> <td style="width: 50%; text-align: center;">Positioned Wrong</td> </tr> <tr> <td style="text-align: center;">Manufacturing Process</td> <td style="text-align: center;">Outside Tolerance</td> </tr> <tr> <td style="text-align: center;">Equip/Tooling</td> <td style="text-align: center;">Drawing</td> </tr> <tr> <td style="text-align: center;">Handling/Preservation</td> <td style="text-align: center;">Finish</td> </tr> <tr> <td style="text-align: center;">Material</td> <td style="text-align: center;">Part Lost/Missing</td> </tr> <tr> <td style="text-align: center;">Product Improvement</td> <td style="text-align: center;">Misread</td> </tr> <tr> <td style="text-align: center;">Process Improvement</td> <td></td> </tr> <tr> <td style="text-align: center;">Human Factors</td> <td></td> </tr> </table>		Operator	Positioned Wrong	Manufacturing Process	Outside Tolerance	Equip/Tooling	Drawing	Handling/Preservation	Finish	Material	Part Lost/Missing	Product Improvement	Misread	Process Improvement		Human Factors		FAULT CATEGORY <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 33%; text-align: center;">Pressure/Forced</td> <td style="width: 33%; text-align: center;">Contamination</td> <td style="width: 33%; text-align: center;">Power Loss/Surge</td> </tr> <tr> <td style="text-align: center;">Bending</td> <td style="text-align: center;">Misaligned/off center</td> <td style="text-align: center;">Folio/Program</td> </tr> <tr> <td style="text-align: center;">Crushing</td> <td style="text-align: center;">BOM/Route</td> <td style="text-align: center;">Grain Direction</td> </tr> <tr> <td style="text-align: center;">Cracks</td> <td style="text-align: center;">Broken/Damage/Defect</td> <td style="text-align: center;">Weld</td> </tr> <tr> <td style="text-align: center;">Crimp/Kink/Ripple/Wave/Twist</td> <td style="text-align: center;">Incomplete/Unclear Instructions</td> <td style="text-align: center;">Wrong Stock Pulled</td> </tr> <tr> <td style="text-align: center;">Marks/Chatter</td> <td style="text-align: center;">Drill Holes</td> <td style="text-align: center;">Out of Sequence</td> </tr> <tr> <td style="text-align: center;">Mislabeled</td> <td style="text-align: center;">Fit/Function</td> <td style="text-align: center;">Off-set/Set-up</td> </tr> </table>			Pressure/Forced	Contamination	Power Loss/Surge	Bending	Misaligned/off center	Folio/Program	Crushing	BOM/Route	Grain Direction	Cracks	Broken/Damage/Defect	Weld	Crimp/Kink/Ripple/Wave/Twist	Incomplete/Unclear Instructions	Wrong Stock Pulled	Marks/Chatter	Drill Holes	Out of Sequence	Mislabeled	Fit/Function	Off-set/Set-up	Other/Details:
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